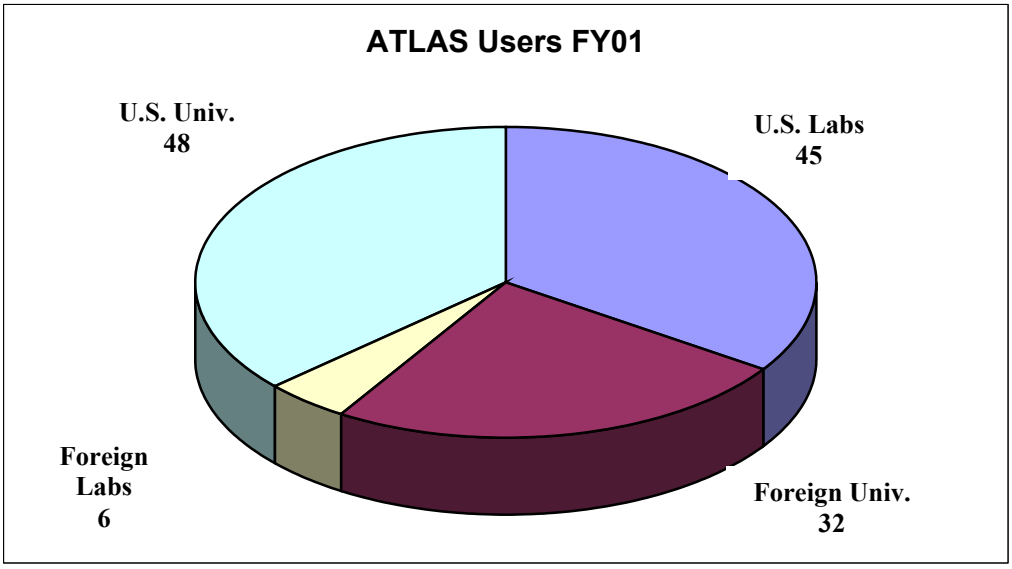
H. ATLAS USER PROGRAM

E. F. Moore

Following the departure of Gammasphere in March 2000, the research program at ATLAS resumed its traditional diversified nature. During the fiscal year 2001, ATLAS hosted strong "campaigns" involving radioactive beams, the BaF_2 array, the CPT, the super-heavy element program, as well as the resurgence of the AMS program. Some of these programs were driven by outside Users, and in all programs, there was considerable outside User involvement Over 95% of all experiments performed in fiscal year 2001 included one or more outside Users and roughly 50% of the approved experiments had an outside User as the Principal Investigator. Frank Moore continued to be available in a user liaison capacity to handle the scheduling of ATLAS experiments, provide assistance in experiment proposal submission matters, and help facilitate the effective performance of research at ATLAS by outside scientists. In addition, a large portion of the Heavy-Ion in-house scientific staff and members of the technical support staff spent time in experiment setup, preparation and assistance for the many different experiments performed at ATLAS.

A total of 131 Users from 47 different institutions were present at ATLAS for experiments in FY 2001. The pie chart below shows the distribution of the institutions represented by ATLAS Users and the number of Users of each type. Of the 45 Users from U.S. National Laboratories, 39 are from Argonne (28 from the Physics Division, 11 from other divisions). There were 32 students at ATLAS for experiments this FY, of which 11 were based at Argonne long-term. The names and institutions of all outside Users who were present at ATLAS in FY 2001 are listed below in section (b).



The program advisory committee met once during the 2001 fiscal year, on March 2, 2001. However, much of the beam time scheduled in FY2001 was approved at the September 22, 2000 PAC meeting. The PAC also met again on October 5, 2001. In FY 2001 the Program Advisory Committee members were:

James Beene	Oak Ridge National Laboratory
Jolie Cizewski	Rutgers University
Stuart Freedman	University of California
David Morrissey	Michigan State University
Lee Riedinger (*chair*)	University of Tennessee
Robert Tribble	Texas A&M University
Alan Wuosmaa	Argonne National Laboratory

The PAC reviewed 25 proposals for 170 days of requested running time at the March meeting. There were also 29 proposals for 179 days of running time that were reviewed at the September, 2000 meeting. Of the submitted proposals for the two meetings, the program advisory committee recommended acceptance of 38 proposals for a total of 179 days of running time. The reduction in days approved from last FY partially reflects the reduction in ATLAS operations from seven to five days average per week that occurred in June, 2001 and continued through the end of the FY.

The fall meeting of the American Physical Society was held in Maui, Hawaii, from 17th to 20th Oct 2001. It was the first ever joint meeting between the American Physical Society and the Japanese Physical Society. The US national nuclear laboratories with low energy heavy ion facilities; ATLAS at Argonne, HHRF at Oak Ridge, and the 88" cyclotron at Lawrence Berkeley National Laboratory, held a joint User Meeting. The purpose was to present the capabilities and performance of current facilities to our Japanese colleagues, and then to have our normal users discussions. Dr. J Cizewski (U. Rutgers) introduced the ATLAS user program, and C. J. Lister presented an overview of the ATLAS facility and some elements of the current physics program. Unfortunately, due to the events of Sept 11th, the meeting was much less well attended than the normal annual gatherings. However, the joint-user-meeting format continues to be generally beneficial as many university groups use more than one of the accelerators, so often issues come up for discussion which need responses from all the national user facilities.

In FY 2001 the ATLAS Executive Committee consisted of Jolie Cizewski (Rutgers University) as Chairperson, Michael Wiescher (University of Notre Dame), Partha Chowdhury (U. Mass Lowell), and Gene Sprouse (SUNY Stony Brook).

a. Experiments Involving Outside Users

All experiments in which outside users directly participated during FY 2001 are listed below. The spokesperson for each experiment is given in square brackets after the title, and the collaborators who were present for the experiment are given with their home institution (as of the end of the FY) below each entry.

1. Proton Radioactivity of Deformed Tb and Pm Isotopes [Davids]
   J. Ressler, J. Shergur, W. Walters, University of Maryland; J. Uusitalo, University of Jyväskylä; T. Davinson, A. Mahmud, K. Schmidt, P. Woods, University of Edinburgh; A. Sonzogni, Brookhaven National Laboratory; C. Davids, A. Heinz, D. Seweryniak, Argonne National Lab.

2. Patterning of Columnar Defects: Fabrication of Vortex Ratchet System for Manipulating Trapped Flux in High Temperature Superconductors [Kwok]
   L. Paulius, Western Michigan University; R. Olsson, Michigan State University; W. Kwok, A. Mazilu, V. Tobos, Argonne National Lab.

3. K-Shell Excitation of He-Like Ni at Intermediate Energy-II [Dunford]
   H. Berry, A. Livingston, University of Notre Dame; P. Mokler, T. Stöhlker, GSI, Darmstadt; R. Dunford, E. Kanter, Argonne National Lab.

4. Coulomb Excitation of Unstable Nuclei [Mueller]
   D. Jenkins, University of Liverpool; J. Church, T. Glasmacher, Z. Hu, K. Miller, W. Mueller, H. Olliver, Michigan State University; I. Wiedenhoever, Florida State University; M. Carpenter, R. Janssens, F. Kondev, K. Lister, J. Schwartz, Argonne National Lab.

5. The Quest for a Detection Method of Natural ^{39}Ar [Collon]
   W. Kutschera, Universität Wien; Y. El Masri, Universit, Catholique de Louvain; M. Paul, Hebrew University of Jerusalem; P. Collon, R. Scott, Columbia University; I. Ahmad, J. Caggiano, A. Heinz, R. Pardo, K. Rehm, R. Vondrasek, Argonne National Lab.

6. High-Energy Photons from Very Symmetric Reactions: The Giant Dipole Resonance in Highly Rotating Cold Nuclei [Bracco]
   A. Bracco, F. Camera, F. Della Vedova, S. Leoni, B. Million, O. Wieland, University of Milano; D. Hofman, University of Illinois- Chicago; V. Nanal, Tata Institute of Fundamental Research; B. Back, M. Carpenter, R. Janssens, Argonne National Lab.

7. Test of a Method to Study Sub-ms Proton and α Emitters [Seweryniak]
   W. Reviol, D. Sarantites, Washington University; J. Ressler, J. Shergur, A. Woehr, University of Maryland; M. Carpenter, A. Heinz, R. Janssens, D. Seweryniak, Argonne National Lab.

8. Low-Spin Levels in Light Odd-Mass Sn Nuclides Populated in the Decay of Sb Nuclides [Ressler]
   J. Ressler, J. Shergur, W. Walters, University of Maryland; T. Sienko, Purdue University, Calumet; K. Abu Saleem, Illinois Institute of Technology; D. Brenner, Clark University; C. Davids, A. Heinz, D. Seweryniak, Argonne National Lab.

9. Highly Selective Studies of the GDR in Hot Nuclei [Hofman]
   D. Jenkins, University of Liverpool; D. Hofman, University of Illinois- Chicago; R. Siemssen, University of Groningen; V. Nanal, Tata Institute of Fundamental Research; P. Heckman, M. Thoennessen, Michigan State University; B. Back, M. Carpenter, D. Henderson, M. Kelly, T. Khoo, F. Kondev, Argonne National Lab.

10. Study of the ^{8}B Neutrino Spectrum Through the $^{8}B(\beta^{+})^{8}Be(2\alpha)$ Decay Chain-II [Freedman]
    S. Freedman, University of California; W. Winter, Lawrence Berkeley National Lab.; J. Greene, D. Henderson, R. Janssens, C. Jiang, E. Moore, R. Pardo, T. Pennington, K. Rehm, G. Savard, J. Schiffer, G. Zinkann, Argonne National Lab.

11. Decay Properties of Particle-Unbound States in ^{19}Ne-III [Rehm]
    L. Jisonna, R. Segel, Northwestern University; M. Paul, Hebrew University of Jerusalem; P. Collon, Columbia University; J. Caggiano, J. Greene, A. Heinz, R. Janssens, C. Jiang, R. Pardo, K. Rehm, J. Schiffer, A. Wuosmaa, Argonne National Lab.

12. Study of Unstable Osmium Nuclei by Coulomb Excitation [Mueller]
    D. Jenkins, University of Liverpool; J. Church, J. Enders, T. Glasmacher, Z. Hu, Z. Hu, K. Miller, W. Mueller, H. Olliver, Michigan State University; I. Wiedenhoever, Florida State University; M. Carpenter, R. Janssens, F. Kondev, K. Lister, T. Pennington, D. Seweryniak, Argonne National Lab.

13. Drip-Line Decay Studies Around A = 76 [Davids]
    J. Ressler, J. Shergur, W. Walters, A. Woehr, University of Maryland; A. Mahmud, P. Munro, P. Woods, University of Edinburgh; F. Sarazin, TRIUMF; C. Davids, A. Heinz, D. Seweryniak, Argonne National Lab.

14. Non-Equilibrium Neutron Emission in Ni + Mo Reactions [Charity]
    R. Charity, L. Sobotka, Washington University; R. de Souza, A. Caraley, Indiana University Cyclotron Facility

15. Preparations Towards a Search for Super-Heavy Elements at ATLAS: Phase I [Heinz]
    J. Shergur, A. Woehr, University of Maryland; K. Abu Saleem, Illinois Institute of Technology; J. Caggiano, M. Carpenter, J. Greene, A. Heinz, D. Henderson, R. Janssens, F. Kondev, R. Pardo, T. Pennington, G. Savard, D. Seweryniak, Argonne National Lab.

16. Radiative Capture and Fusion Dynamics in Cold Fusion $^{90}Zr + ^{92}Mo$ Reaction [Kondev]
    A. Woehr, University of Maryland; D. Jenkins, University of Liverpool; I. Ahmad, M. Carpenter, C. Davids, A. Heinz, R. Janssens, T. Khoo, F. Kondev, T. Lauritsen, K. Lister, D. Seweryniak, Argonne National Lab.

17. Measurement of Helium-3 to Helium-4 Ratios in Isotopically Purified Helium [Doyle]
    P. Huffman, Nat'l. Inst. of Standards & Tech.; D. McKinsey, Harvard University; P. Collon, R. Scott, Columbia University; J. Caggiano, A. Heinz, R. Janssens, C. Jiang, D. Moehs, R. Pardo, K. Rehm, J. Schiffer, R. Vondrasek, Argonne National Lab.

18. Coulomb Excitation of ^{124}Xe, ^{126}Xe, and ^{128}Xe [Wiedenhoever]
    A. Gade, Universität zu Köln; T. Glasmacher, P. Lofy, K. Miller, W. Mueller, H. Olliver, Michigan State University; I. Wiedenhoever, Florida State University; M. Carpenter, R. Janssens, K. Lister, Argonne National Lab.

19. Controlling the Dynamics of Vortex and Domain Motion in Superconducting and Magnetic Materials Through Heavy-Ion Irradiation [Miller]
    J. Hettinger, Rowan College of New Jersey; R. Olsson, Michigan State University; D. Kim, D. Miller, E. Moore, Argonne National Lab.

20. Test of the New Transport System for the In-Flight Secondary Beam Production Setup [Pardo]
    R. Segel, Northwestern University; M. Paul, Hebrew University of Jerusalem; P. Collon, Columbia University; J. Caggiano, J. Greene, A. Heinz, D. Henderson, R. Janssens, C. Jiang, R. Pardo, T. Pennington, K. Rehm, J. Schiffer, G. Zinkann, Argonne National Lab.

21. Hot GDR in ^{118}Sn [Heckman]
    D. Hofman, University of Illinois- Chicago; V. Nanal, Tata Institute of Fundamental Research; R. Varner, Oak Ridge National Laboratory; P. Heckman, M. Thoennessen, Michigan State University; B. Back, M. Carpenter, M. Kelly, T. Khoo, Argonne National Lab.

22. A New Technique for Producing ^{25}Al Beams at ATLAS [Caggiano]
    P. Collon, Columbia University; J. Caggiano, J. Greene, A. Heinz, D. Henderson, C. Jiang, T. Pennington, K. Rehm, D. Seweryniak, Argonne National Lab.

23. Limits of Stability of ^{254}No in Spin and Excitation Energy [Reiter]
    A. Woehr, University of Maryland; C. Bhattacharya, Université, Louis Pasteur; J. Cizewski, M. Smith, Rutgers University; P. Reiter, Ludwig Maximilians-Universität München; K. Vetter, Lawrence Livermore National Lab.; I. Ahmad, J. Caggiano, M. Carpenter, A. Heinz, R. Janssens, T. Khoo, F. Kondev, T. Lauritsen, K. Lister, D. Seweryniak, Argonne National Lab.

24. The N = Z Waiting Point Nucleus ^{68}Se [Aprahamian]
    A. Aprahamian, J. Goerres, University of Notre Dame; A. Woehr, University of Maryland; S. Fischer, De Paul University; R. Janssens, D. Seweryniak, Argonne National Lab.

25. Measuring the Charge Radius of He-6 [Lu]
    C. Law, Monmouth College; M. Paul, Hebrew University of Jerusalem; P. Collon, Columbia University; K. Bailey, J. Caggiano, A. Heinz, D. Henderson, R. Holt, R. Janssens, C. Jiang, Z. Lu, T. O'Connor, R. Pardo, T. Pennington, K. Rehm, J. Schiffer, Argonne National Lab.

26. Structure of Hot Dy Nuclei as a Function of Spin and Excitation Energy Probed Through the Giant Dipole Resonance [Nanal]
    D. Jenkins, University of Liverpool; D. Hofman, University of Illinois- Chicago; V. Nanal, Tata Institute of Fundamental Research; P. Heckman, Michigan State University; B. Back, M. Carpenter, A. Heinz, T. Khoo, F. Kondev, Argonne National Lab.

27. Test of the RIA Gas Cell Prototype [Savard]
    J. Clark, J. Vaz, University of Manitoba; C. Boudreau, McGill University; J. Caggiano, A. Heinz, G. Savard, J. Schwartz, D. Seweryniak, Argonne National Lab.

28. Mass Measurements Along the N = Z Line With the CPT Mass Spectrometer [Savard]
    J. Clark, K. Sharma, J. Vaz, University of Manitoba; G. Sprouse, S.U.N.Y. at Stony Brook; C. Boudreau, F. Buchinger, McGill University; M. Maier, GSI, Darmstadt; J. Caggiano, A. Heinz, G. Savard, D. Seweryniak, J. Wang, Argonne National Lab.

29. Studies of Sub-ms Proton and a Emitters [Seweryniak]
    A. Woehr, University of Maryland; M. Carpenter, C. Davids, A. Heinz, D. Seweryniak, Argonne National Lab.

30. Spectroscopy of Proton-Unbound States in ^{26}Si - II [Caggiano]
    P. Parker, Yale University; Y. Nagame, Japan Atomic Energy Res. Inst.; P. Collon, Columbia University; J. Caggiano, J. Greene, A. Heinz, R. Janssens, C. Jiang, K. Lister, K. Rehm, Argonne National Lab.

31. High Energy Photons From Very Symmetric Reactions: the Giant Dipole Resonance in Highly Rotating Cold Nuclei [Carpenter]
    A. Bracco, F. Camera, O. Wieland, University of Milano; D. Jenkins, University of Liverpool; R. Varner, Oak Ridge National Laboratory; M. Carpenter, A. Heinz, R. Janssens, T. Khoo, F. Kondev, T. Lauritsen, K. Lister, E. Moore, D. Seweryniak, Argonne National Lab.

32. Preparations Towards a Search for Super-Heavy Elements at ATLAS: PHASE I [Heinz]
    M. Smith, Rutgers University; A. Woehr, University of Maryland; P. Collon, Columbia University; I. Ahmad, B. Back, M. Carpenter, A. Heinz, R. Janssens, C. Jiang, T. Khoo, F. Kondev, T. Lauritsen, K. Lister, E. Moore, G. Savard, J. Schiffer, D. Seweryniak, Argonne National Lab.

33. Continuation of the Mass Measurement Program Along the N = Z Line with the CPT Mass Spectrometer [Savard]
    J. Clark, M. Froese, K. Sharma, J. Vaz, University of Manitoba; L. Frankland, University of Brighton; C. Boudreau, P. Coulombe-Pontbrian, J. Crawford, S. Gulick, McGill University; J. Caggiano, A. Heinz, G. Savard, D. Seweryniak, J. Wang, Argonne National Lab.

34. Proton Decay of ^{135}Tb [Davids]
    J. Shergur, W. Walters, A. Woehr, University of Maryland; T. Davinson, A. Mahmud, P. Munro, P. Woods, University of Edinburgh; C. Davids, A. Heinz, D. Seweryniak, Argonne National Lab.

35. Identification of the Astrophysical Resonance in the ^{19}Ne(p,γ)^{20}Na Reaction [Woods]
    J. Goerres, M. Shawcross, University of Notre Dame; J. Shergur, A. Woehr, University of Maryland; A. Mahmud, C. Ruiz, P. Woods, University of Edinburgh; F. Sarazin, TRIUMF; U. Greife, Colorado School of Mines; M. Carpenter, C. Davids, A. Heinz, R. Janssens, T. Khoo, K. Rehm, D. Seweryniak, Argonne National Lab.

36. Study of the Fusion Evaporation Cross Section at Very Low Energies [Jiang]
    Y. Nagame, Japan Atomic Energy Res. Inst.; P. Collon, Columbia University; B. Back, J. Caggiano, A. Heinz, R. Janssens, C. Jiang, K. Rehm, D. Seweryniak, Argonne National Lab.

37. Upgrading of the Large-Acceptance Focal Plane Detector for Use in Gas-Filled Spectrograph Mode [Paul]
    M. Paul, Hebrew University of Jerusalem; P. Collon, Columbia University; A. Heinz, D. Henderson, C. Jiang, K. Rehm, Argonne National Lab.

38. A Measurement of the Efficiency and Linear Polarization Sensitivity of a Planar Germanium Strip Detector (HPGe DSSD) [Jenkins]
    D. Jenkins, University of Liverpool; T. Sienko, Purdue University, Calumet; A. Goergen, Lawrence Berkeley National Lab.; M. Carpenter, R. Janssens, T. Khoo, F. Kondev, E. Moore, Argonne National Lab.

39. Accelerator Mass Spectrometry of ^{39}Ar for Oceanographic Research [Collon]
    W. Kutschera, Universität Wien; P. Collon, R. Scott, Columbia University; I. Ahmad, A. Heinz, C. Jiang, R. Pardo, K. Rehm, R. Vondrasek, G. Zinkann, Argonne National Lab.

40. Identification of the $g_{7/2}$ Neutron Single-Particle Level in ^{103}Sn and Search for ^{105}Te [Walters]
    J. Ressler, J. Shergur, W. Walters, A. Woehr, University of Maryland; M. Lipoglavsek, Jozef Stefan Institute; C. Davids, D. Seweryniak, Argonne National Lab.

41. Test of the Recoil-Beta Tagging Method [Seweryniak]
    M. Shawcross, University of Notre Dame; J. Ressler, J. Shergur, A. Woehr, University of Maryland; F. Sarazin, TRIUMF; A. Heinz, D. Seweryniak, Argonne National Lab.

b. Outside Users of ATLAS During the Period October 1, 2000 - September 30, 2001

This list includes all outside Users who were an experiment spokesperson (a), alternate spokesperson (b), student (*), or collaborator actually present at ATLAS for an experiment. An additional 21 Users listed as collaborators on the various experiment proposals were not at ATLAS in person, and thus are not represented in the list below.

1. Brookhaven National Laboratory
   A. Sonzogni

2. Clark University
   D. Brenner

3. Colorado School of Mines
   U. Greife

4. Columbia University
   ab P. Collon
   * R. Scott

5. De Paul University
   b S. Fischer

6. Florida State University
   a I. Wiedenhoever

7. GSI, Darmstadt
   M. Maier
   P. Mokler
   T. Stöhlker

8. Harvard University
   a J. Doyle
   * D. McKinsey

9. Hebrew University of Jerusalem
   a M. Paul

10. Illinois Institute of Technology
    * K. Abu Saleem

11. Indiana University Cyclotron Facility
    A. Caraley
    R. de Souza

12. Japan Atomic Energy Res. Inst.
    Y. Nagame

13. Jozef Stefan Institute
    M. Lipoglavsek

14. Lawrence Berkeley National Lab.
    b A. Goergen
    * W. Winter

15. Lawrence Livermore National Lab.
    K. Vetter

16. Ludwig Maximilians-Universität München
    a P. Reiter

17. McGill University
    * C. Boudreau
    F. Buchinger
    * P. Coulombe-Pontbrian
    J. Crawford
    S. Gulick

18. Michigan State University
    - * J. Church
    - J. Enders
    - b T. Glasmacher
    - a* P. Heckman
    - Z. Hu
    - * P. Lofy
    - * K. Miller
    - a W. Mueller
    - * H. Olliver
    - * R. Olsson
    - b M. Thoennessen

19. Monmouth College
    - * C. Law

20. Nat'l. Inst. of Standards & Tech.
    - P. Huffman

21. Northwestern University
    - * L. Jisonna
    - b R. Segel

22. Oak Ridge National Laboratory
    - R. Varner

23. Purdue University, Calumet
    - * T. Sienko

24. Rowan College of New Jersey
    - J. Hettinger

25. Rutgers University
    - J. Cizewski
    - M. Smith

26. S.U.N.Y. at Stony Brook
    - G. Sprouse

27. TRIUMF
    - F. Sarazin

28. Tata Institute of Fundamental Research
    - a V. Nanal

29. University of Brighton
    - * L. Frankland

30. University of California
    - a S. Freedman

31. University of Edinburgh
    - T. Davinson
    - * A. Mahmud
    - * P. Munro
    - * C. Ruiz
    - K. Schmidt
    - ab P. Woods

32. University of Groningen
    - R. Siemssen

33. University of Illinois- Chicago
    - a D. Hofman

34. University of Jyväskylä
    - J. Uusitalo

35. University of Liverpool
    - a D. Jenkins

36. University of Manitoba
    - * J. Clark
    - M. Froese
    - K. Sharma
    - * J. Vaz

37. University of Maryland
    - * J. Shergur
    - a W. Walters
    - A. Woehr

38. University of Milano
    - a A. Bracco
    - F. Camera
    - * F. Della Vedova
    - S. Leoni
    - B. Million
    - O. Wieland

39. University of Notre Dame
    - a A. Aprahamian
    - H. Berry
    - J. Goerres
    - A. Livingston
    - M. Shawcross

40. Université, Catholique de Louvain
    - Y. El Masri

41. Université, Louis Pasteur
    - * C. Bhattacharya

42. Universität Wien
    b W. Kutschera

43. Universität zu Köln
    * A. Gade

44. Washington University
    a R. Charity
    b L. Sobotka
      D. Sarantites
      W. Reviol

45. Western Michigan University
    L. Paulius

46. Yale University
    P. Parker

c. Upgrades to the ATLAS Web Page

Several improvements to the ATLAS web page (http://www.phy.anl.gov/atlas/index.html) were made during FY01. During the summer, a student from Richard J. Daley College in Chicago, Terri Haslinger, worked with Frank Moore on the web page upgrades as part of the Community College Institutes (CCI) program sponsored by the Department of Energy (http://www.scied.science.doe.gov/scied/CCI/about.html) and administered by the ANL Division of Educational Programs. While many of the improvements were related to formatting and appearance, there were several that had direct impact on the User program. In particular, a web-based proposal submission process was implemented using the forms/CGI interface. This allows Users to submit ATLAS proposals electronically through the web and by e-mail. A screen snapshot of part of the form is shown below. Over half of the proposals submitted for the October 5, 2001 meeting of the PAC were submitted electronically.